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Fish Habitat Management on the Tongass National Forest

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USDA Forest Service

Alaska Region



Fish Habitat: A Major Tongass National Forest Program

Fish habitat on the Tongass is important. One-fourth of the Alaska commercial salmon harvest comes from Tongass streams. The 1989 statewide catch exceeded 690 million pounds, a new record. At its peak, the fishing industry, dependent upon fish from Tongass National Forest habitat, provides over 4600 jobs and earnings of \$100 million.

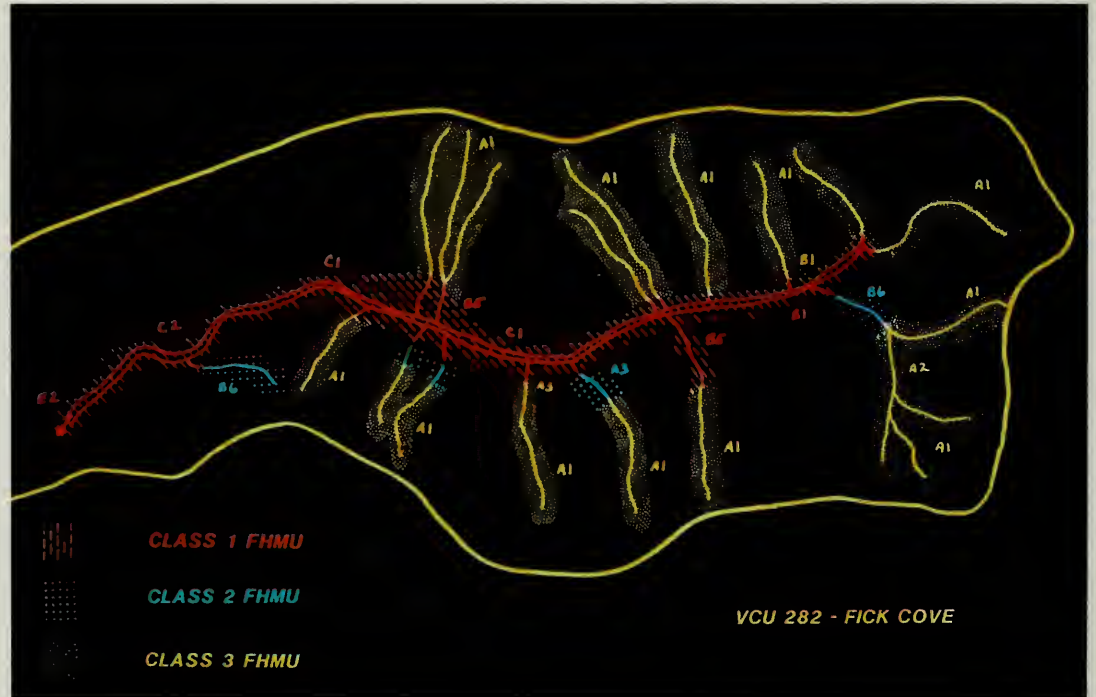
Since 1980, the Forest Service has spent over \$14 million improving fish habitat. The result is a potential annual increase of 8 million pounds of anadromous fish. The Alaska Department of Fish and Game, Aquaculture Associations, Trout Unlimited, Louisiana Pacific, and many others cooperated. Cooperators contributed approximately \$700,000 in 1989.



Water quality measurements are taken; water temperatures, sediments, and other concerns are closely monitored to insure fish habitat protection.

Fish Habitat Protection Required by Federal Law

The National Forest Management Act of 1976 requires the Forest Service to protect fish habitat on the National Forests: "Insure that timber will be harvested from National Forest system lands only where protection is provided for streams, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat." Regulations further direct that: "Special attention shall be given to land and vegetation for approximately 100 feet from the edges of all perennial streams. No management practices causing detrimental changes in the water temperature or chemical composition, blockage of water courses, or deposits of sediment shall be permitted."

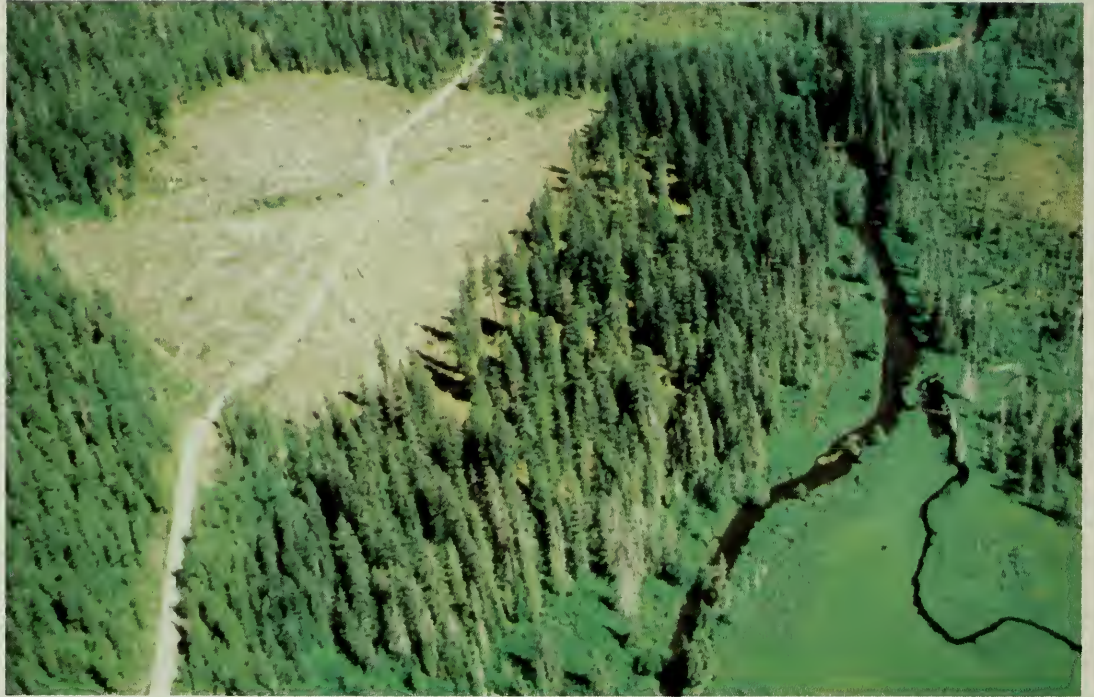


Fish habitat Management Units (FHMU) have been designated with site-specific direction for protection of fish habitat.

Current Forest Service Policies Protect Fish Habitat

The Forest Service National Riparian Policy states: "Manage riparian areas under the principles of multiple-use and sustained-yield, while emphasizing protection and improvement of soil, water, vegetation, and fish and wildlife resources . . ." The Alaska Regional Guide, developed in 1983, established Fish Habitat Management Units within which: ". . . timber harvest and other land-use activities are prescribed to meet management goals for fish habitat."

An Aquatic Habitat Management Handbook to implement the Guide was subsequently developed by an interdisciplinary team which included Forest Service, State Department of Fish and Game, U.S. Fish and Wildlife Service, and National Marine Fisheries Service representatives.



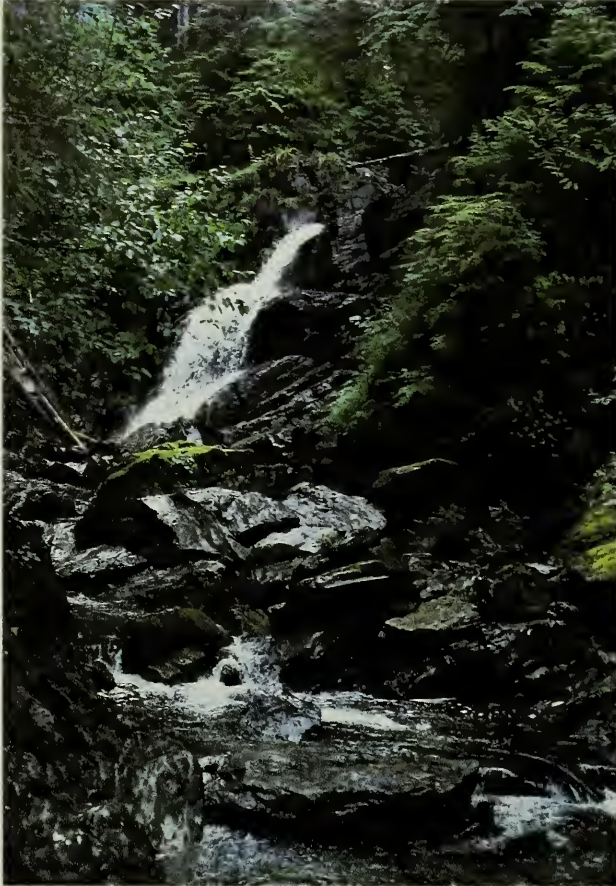
Site-specific fish habitat, water quality, and recreation objectives were primary considerations in designing this harvest unit near a popular canoe route and an anadromous fish stream.

Under Aquatic Habitat Unit Handbook direction, Tongass National Forest streams are classified and cataloged according to their importance to fish:

1. Class I: Streams with anadromous fish habitat or a high value resident sport fishery. (Anadromous fish spend part of their life cycle in fresh water and part in salt water.)
2. Class II: Streams with resident fish populations.
3. Class III: Streams with no fish present but with potential water quality influence on downstream fish habitat.

Different fish habitat management and water quality protection measures used within each class are dependent upon individual conditions.

high gradient



low gradient stream



Low gradient, high quality Class I fish streams require different streamside management than high gradient Class III non-fish streams.

Habitat Protection on the Ground

The Forest Service implements these habitat management laws, regulations, and policies site-specifically to meet fisheries goals. Following field investigations, streamside management prescriptions are designed to best protect or enhance fish habitat at specific sites. Many site-specific factors, such as stream channel and bank characteristics and conditions; water temperature, soils, fish passage capability; water quality; large woody debris; timing for bridge and culvert installation; and stream class are evaluated.

Prescriptions specify width of area within which no commercial logging is permitted. On anadromous fish streams, this width may vary from 25 to more than 200 feet depending upon evaluation of all factors.



Interdisciplinary teams evaluate specific sites to develop streamside prescriptions.

Factors such as timing and structural needs for bridges and culverts needed for habitat protection are included in prescriptions.



Site-Specific Approach

The Forest Service, as well as other Federal and State agencies, have similar fish habitat goals. The Forest Service approach is to custom design protection and management measures specific to each stream site using inter-disciplinary teams consisting of: fish and wildlife biologists, hydrologists, soil scientists, foresters, and engineers. The Forest Service believes this to be the best professional approach for achieving the objectives of the National Forest Management Act, and resource management goals in the Tongass Land Management Plan.



Large woody debris is important for good fish habitat.

Research studies are conducted to determine fish habitat requirements and management recommendations.



Forest Service Policy Based on Research

Many research studies have been, and are being, conducted in Southeast Alaska on habitat requirements of anadromous and resident fish, effects of land-use activities on fish habitat, and fish habitat enhancement opportunities. Results are incorporated into Forest Service policies and prescriptions. Research has pointed out the substantial variability in conditions, and the opportunities and need for similarly variable prescriptions. An example is large woody debris. Previously, biologists and others believed all logging debris had to be removed from streams to protect fish habitat. Forest Service policy reflected that belief. Through research, it was determined that some large woody debris in streams is needed to protect fish and to increase salmon and trout production. Current policy and management practice provides for enough debris for fish habitat and retention of standing trees nearby for future replacement.

Research has identified other ways to protect and enhance fish habitat. In some locations, increased light reaching the stream is needed to increase fish production, further pointing out the need for individual prescriptions based on local conditions and characteristics.



The layout of these cutting units prescribed by an interdisciplinary team, including fish biologists, demonstrate the tremendous variability in site-specific conditions.



Existing federal laws, regulations, and policies provide the needed direction to protect fish habitat on the Tongass National Forest. They permit recognition and allowance for the tremendous variability in conditions and the wide range of respective management opportunities available and often necessary to achieve overall National Forest management objectives.

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